

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013811**Date Inspected:** 02-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspector: Mr. Li Yang

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed ZPMC welder Ms. Chen Fenglian, stencil 206623 has been using flux cored welding procedure WPS-B-T-2233-B-U2-F to make OBG weld SEG3002G-005 at OBG segment 12BE between panel point 113.5 diaphragm plate and floor beam. This QA Inspector observed QC Inspector Mr. Guo Pan has recorded a welding current of 215 amps and 24.7 volts and that Ms. Chen Fenglian appears to be certified to make this weld.

Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Shizhen, stencil 48694 is using shielded metal arc procedure WPS-B-P-2113-FCM-1 to make tack welds between longitudinal diaphragms and deck plate DP3045-001. This QA Inspector observed a welding current of approximately 190 amps and Mr. Jiang Shizhen appears to be certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

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OBG Segment Assembly

ABF issued "Inspection Notification Sheet" number 05012010-1 item #1 informing QA that on 5-02-2010 at 18:30 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld SEG043*-047 which joins the OBG segment 8AW deck plate and the edge plate on the cross beam side of the OBG. This weld is located at the Trial Assembly area. This QA Inspector observed ABF personnel have marked this weld repair as being UT acceptable. This QA Inspector performed ultrasonic inspections of the weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and unacceptable indications were noted. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections.

ABF issued "Inspection Notification Sheet" number 05012010-1 item #2 informing QA that on 5-02-2010 at 18:30 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld CA050-004 which joins the OBG segment 8BW deck plate and the edge plate on the cross beam side of the OBG. This weld is located at the Trial Assembly area. This QA Inspector observed ABF personnel have marked this weld repair as being UT acceptable. This QA Inspector performed ultrasonic inspections of the weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and unacceptable indications were noted. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections

This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 is using shielded metal arc welding procedure WPS-B-P-2213-B-U2-FCM-1 to make 3G (vertical) position shielded metal arc weld OBW7A-006 which joins the edge plates between OBG segments 7DW and 7EW on the counterweight side. This QA Inspector observed Mr. Tian Zhaoquan has a welding current of approximately 140 amps and Mr. Tian Zhaoquan appears to be certified to make this weld. This QA Inspector observed the welding electrodes are being stored in a heated portable electrode storage oven and the base material appears to have been preheated with an electrical heating element located on the interior of the OBG segments. Items observed on this date appeared to generally comply with applicable contract documents.

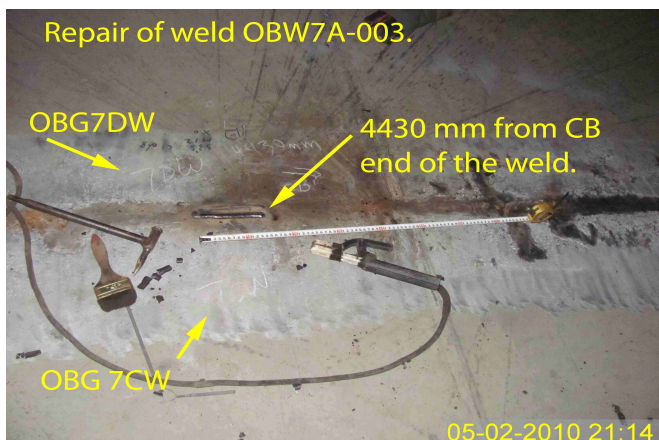
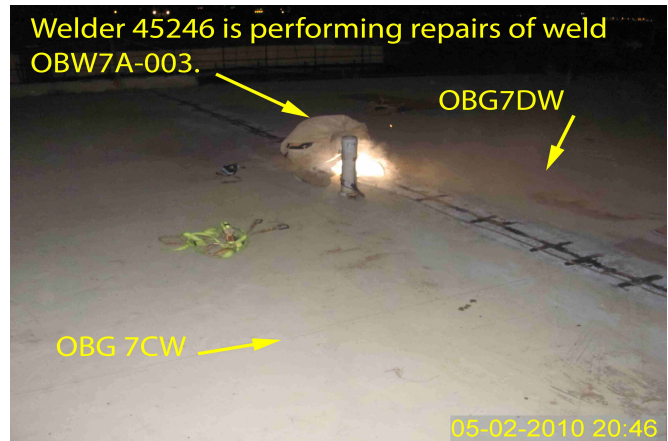
This QA Inspector observed ZPMC welder Mr. Yun Chuansheng, stencil 045221 is using shielded metal arc welding procedure specification WPS-B-P-2214-B-U2-FCM-1 to complete butt weld OBW7A-006 repairs between OBG the counterweight side between segments 7DW and 7EW. This QA Inspector observed a welding current of approximately 160 amps and that Mr. Yun Chuansheng appears to be certified to perform this welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 is using shielded metal arc welding process to make 1G position shielded metal arc repair weld OBW7A-003. This weld joins the top deck plate between OBG segments 7CW and 7DW. This QA Inspector observed Mr. Tian Zhaoquan appears to be certified to make this weld. This QA Inspector observed the welding electrodes are being stored in a portable electrode storage oven that is cool to the touch and the oven is not connected to any electrical power supply. This QA Inspector did not observe any torch or electrical heating element anywhere near where this welding was taking

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place and the base material does not appear to have been preheated prior to welding. This QA Inspector walked to the QC office and asked ZPMC CWI Mr. Li Yang to see the weld repair document for this weld and the name of the ZPMC QC Inspector is monitoring weld repair OBW7A-003. Mr. Li Yang informed this QA Inspector that no ZPMC QC Inspector had been informed that this weld repair was going to take place and after Mr. Li Yang looked at the weld repair he informed this QA Inspector that ZPMC QC personnel at the Segment Assembly area have not monitored any of this welding and they do not have a weld repair document that authorizes this welding. This QA Inspector informed Mr. Li Yang that the base material where this weld repair is being made does not appear to have been preheated and that other previous weld repairs of similar weld joints have required post weld base material to be maintained at an elevated temperature after the completion of the welding. Mr. Li Yang informed this QA Inspector that ZPMC should have preheated this base material with electrical heating elements prior to welding. ABF representative Mr. Zhou Xiao Bing also inspected this weld repair and he agreed there had not been a weld repair document issued for this weld. This QA Inspector informed CWI Mr. Li Yang and ABF representative Mr. Zhou Xiao Bing that an incident report is being issued to document this weld repair being made without base material preheat, lack of a weld repair document and lack of QC monitoring of the repair weld activities. See the photographs below for additional information.



Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or

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remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
